TRANSMITTAL OF APPEAL BRIEF (Large Entity)	Docket No. YOR920010417US1

In Re Application Of: **Brenda Dietrich**

Application No.	Filing Date	Examiner	Customer No.	Group Art Unit	Confirmation No.
09/850,383	May 7, 2001	Chencinski, Siegfried E.	21254	3628	2717

Invention: **AUCTIONS FOR MULTIPLE ITEMS WITH CONSTRAINTS SPECIFIED BY THE BIDDERS**

COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

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Dated: **July 10, 2006**

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July 10, 2006

VIA FACSIMILE
EXPEDITED PROCEDURE

To: Examiner Siegfried E. Chencinski
Group Art Unit No. 3628
U. S. P. T. O.

Facsimile No. 571-273-8300

From: Phillip E. Miller

Facsimile No. 703-761-2375

Re: Filing of Appeal Brief
U. S. Patent Application Serial No. 09/850,383
Our Ref: YOR.584

Dear Examiner:

Enclosed please find an Appeal Brief in the above Application.

Thank you in advance for your kind consideration of this case.

Very truly yours,

Phillip E. Miller

PEM/lnb
Enclosure

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

Brenda Dietrich

Serial No.: 09/850,383 Group Art Unit: 3628

Filed: May 7, 2001 Examiner: Chencinski, Siegfried E.

For: **AUCTIONS FOR MULTIPLE ITEMS WITH CONSTRAINTS SPECIFIED BY THE BIDDERS**

Commissioner of Patents
Alexandria, VA 22313-1450

APPELLANT'S BRIEF ON APPEAL

Sir:

Appellant respectfully appeals the rejection of claims 1-19 in the Office Action dated February 8, 2006. A Notice of Appeal was timely filed on May 8, 2006.

I. REAL PARTY IN INTEREST

The real party in interest is International Business Machines Corporation, assignee of 100% interest of the above-referenced patent application.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences known to Appellant, Appellant's legal representative or Assignee which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-19, all of the claims presently pending in the application, stand rejected on prior art grounds.

Claims 1-2, 6-7, and 11-19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ausubel (U.S. Patent No. 5,905,975). Appellant notes that on page 2 of the Office Action, the Examiner states that this rejection is based on "*35 U.S.C. § 102(b)*". However, considering that the rejection is included in the section entitled "**Claim Rejections - 35 U.S.C. § 103(a)**", and the rejection includes language on pages 2-3 regarding an alleged modification of Ausubel, Appellant suspects that this is a typographical error and the Examiner, in fact, intended to reject these claims under 35 U.S.C. § 103(a). Therefore, Appellant will treat this rejection as a rejection under 35 U.S.C. § 103(a).

Claims 3-5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ausubel, and further in view of McAfee, et al. (U.S. Patent No. 6,718,312 B1) (hereinafter "McAfee"). Claims 8-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ausubel in view of Macready, et al. (U.S. Publication No. 2002/0016759) (hereinafter "Macready").

These rejections are being appealed for all claims.

IV. STATUS OF AMENDMENTS

On April 10, 2006, Appellant filed a Response (which did not amend the claims) in reply to the Final Office Action dated February 8, 2006. In an Advisory Action dated July 6, 2006, the Examiner indicated that "Applicant's after final arguments have not persuaded the examiner that the guidelines for withdrawal of the final rejection have been met".

Attached hereto is a Claims Appendix which sets forth the claims as amended by Appellant in the Amendment filed under 37 CFR §1.111 on August 8, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Appellant's invention, as disclosed and claimed in, for example, independent claim 1 is directed to a computer implemented method for an auction including establishing an auction system, receiving at least one **constraint** specified by a participant in the auction (lines 11-12 of page 5 and Figures 2a and 2b), wherein the constraint characterizes combinations of items desired by the participant within the auction system (line 13 of page 5 through line 15 of page 6 and line 10 of page 7 through line 8 of page 8), and **determining a winner in the auction, based on the constraint** specified by the participant (lines 9-10 of page 8 and reference character 28 of Figure 1).

Another exemplary aspect of the invention, as recited in independent claim 13, is directed to a program medium executable in a computer system for facilitating an auction. The program medium includes machine-readable instructions to cause the computer system to execute steps for establishing an auction system, enabling the auction system so that it is responsive to **constraints** specified by a participant in the auction (lines 11-12 of page 5 and Figures 2a and 2b), wherein the constraints characterize combinations of items desired by the participant within the auction system (line 13 of page 5 through line 15 of page 6 and line 10 of page 7 through line 8 of page 8), and **generating a proposal, based on the constraints** specified by the participant (lines 6-13 of page 12), **using a column generation formulation** (lines 1-2 of page 12).

A further exemplary aspect of the invention, as recited in independent claim 14, is directed to a computer implemented method for facilitating an auction including receiving **constraints** specified by a participant in the auction (lines 11-12 of page 5 and Figures 2a and 2b), wherein the constraints characterize combinations of items desired by the participant within the auction system (line 13 of page 5 through line 15 of page 6 and line 10 of page 7 through line 8 of page 8), and **formulating a winner determination problem, with the constraints specified by the participant, as an integer problem** (lines 9-10 of page 8).

As explained beginning at line 11 on page 3 of the specification, conventional methods do not enable auction participants to specify constraints that describe or

characterize a combination of items they wish to win or sell. Nor do conventional methods solve a winner determination problem in auction systems that permit participants to specify such constraints.

As explained on lines 8-17 on page 11 of the specification, the exemplary aspects of the claimed invention may provide, amongst other features, at least one **constraint** specified by a participant in the auction, wherein the at least one constraint characterizes combinations of items desired by the participant within the auction system. In this manner, a bidder may place individual bids for items of interest to them and specify a value for each item of interest. The constraint is specified by the participants in the auction, and each participant can specify their own constraint (or set of constraints), for example, total budget, "either/or" constraints, or precedent constraints.

The invention may also **determine a winner** (e.g., determine winning bids that maximize total revenue) **based on the constraint** (Application at page 8, lines 9-19; page 10, line 16-page 11, line 17). That is, **the claimed invention may allow the "winner determination problem" to be formulated as an integer program (e.g., including the constraints specified by a participant in the auction) which can be solved by commercially available software packages** (Application at page 1, lines 5-7).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Appellants present three issues for review by the Board of Patent Appeals and Interferences, as follows:

A. Whether claims 1-2, 6-7, and 11-19 are unpatentable under 35 U.S.C. § 103(a) over Ausubel (U. S. Patent No. 5,905,875);

B. Whether claims 3-5 are unpatentable under 35 U.S.C. § 103(a) over Ausubel in view of McAfee et al. (U. S. Patent No. 6,718,312); and

C. Whether claims 8-10 are unpatentable under 35 U.S.C. § 103(a) over Ausubel in view of Macready et al. (U. S. Patent Pub. No. 2002/0016759).

VII. ARGUMENTS

A. Claims 1-2, 6-7 and 11-19 are clearly not unpatentable under 35 U.S.C. § 102(b) over Ausubel (U. S. Patent No. 5,905,875)

1. The Examiner's Position:

a. The Office Action

In the Office Action dated February 8, 2006, the Examiner attempts to rely on col. 2, lines 39-50 and col. 29, lines 4-14 to support his allegation that Ausubel teaches receiving at least one constraint specified by a participant in the auction. The Examiner concedes that "*Ausubel does not explicitly disclose determining a winner in the auction, based on the constraint specified by the participant*". However, the Examiner goes on to allege that

> "*Ausubel does disclose transactions which result from the auctions taught by him. An ordinary practitioner of the art at the time of Applicant's invention would have understood that both parties to an auction transaction are winners in the commonly understood meaning of any transaction which results from an auction, since botth (sic) parties have to be satisfied that the yare (sic) each better off by entering into the transaction versus not entering into the transaction. This makes each one a winner in the common understanding of the matter*" (Office Action at page 2).

The Examiner goes on to state that

> "*it would have been obvious to an ordinary practitioner of the art at the time of Applicant's invention to have combined the art of Ausubel with the common understanding about transactions and particularly about transactions resulting from an auction process, motivated by a desire to*

offer and implement improved auction methods". (Office Action at pages 2-3).

With respect to independent claim 13, the Examiner refers to the rejection of claim 1, and further alleges on page 4 of the Office Action that

"*Audubel (sic) suggests generating a proposal, based on the constraints specified by the participant, using a column generation formulation (Fig. 3D displays bid data in a column...*"

With respect to independent claim 14, the Examiner simply refers to the rejection of claims 1 and 11 to support his position (in the rejection of claim 11, the Examiner alleges that Ausubel teaches "*the use formulation and processing of an auction process through the use of an integer approach (Fig's (sic) 3D-12B))*".

B. Appellant's Arguments

a. Independent claim 1

Independent claim 1 recites:

"*A computer implemented method for an auction comprising:*

establishing an auction system;

receiving at least one ***constraint*** *specified by a participant in the auction, wherein the constraint characterizes combinations of items desired by the participant within the auction system; and*

determining a winner in the auction, based on the constraint *specified by the participant.*"

Appellant respectfully submits that the Examiner's position is flawed as a matter of law and as a matter of fact.

The Examiner alleges that the invention of claims 1, 2, 6, 7 and 11-19 are anticipated by Ausubel. However, Appellant respectfully submits that the reference does not teach or suggest each and every element of the claimed invention.

Ausubel discloses a computer implemented system and method of executing an auction including at least two intelligent systems. (See Ausubel at Abstract)

However, **as conceded by the Examiner**, Ausubel does not teach or suggest "*determining a winner in the auction, based on the constraint specified by the participant*", as recited in claim 1. As noted above, the claimed invention may allow the "winner determination problem" to be **formulated as an integer program (e.g., including the constraints specified by a participant in the auction) which can be solved by commercially available software packages** (Application at page 1, lines 5-7).

Clearly, this feature is <u>not</u> taught or suggested by Ausubel. Indeed, as noted above, the Examiner concedes that this is not taught or suggested by Ausubel. Instead, the Examiner alleges that Ausubel would have been modified by a "common understanding" to include this feature. The Examiner is clearly incorrect.

In fact, it is important to point out that the Examiner is misconstruing the term "constraint" in claim 1. Indeed, Appellant submits that **the Examiner is construing the term "constraint" in a manner which is 1) contrary to its commonly accepted meaning in the art, and 2) certainly contrary to the meaning of the term as used in the Specification**.

That is, Appellant would point out that the Examiner is attempting to equate the simple "bidding rule" in Ausubel with the "constraint" of the claimed invention. However, the "rule" in Ausubel is defined simply an "expression of the willingness-to-pay or value which a bidder places on objects" (Ausubel at col. 6, lines 55-56). For example, in Ausubel's "EXAMPLE ONE" beginning at line 36 in column 10, Ausubel teaches that an auctioneer begins a computerized auction by transmitting a message indicating that he is willing to sell 1,000,000 shares at $10 apiece. Bidders are permitted to input a response including a "bidding rule" which resides in the user database (Ausubel at col. 11, lines 5-14). Ausubel then gives an example of a "flexible bid function" and teaches that "at a

given time, with an initial query the auctioneer queries the user database and accesses the quantity which each bidder demands at $10, and so forth (Ausubel at col. 11, lines 15-42).

This is completely unrelated to the "constraint" of the claimed invention. That is, it is completely unreasonable to equate the "bidding rule" in Ausubel with the "constraint" of the claimed invention. Indeed, Appellant would point out that the Application states that "[t]his invention is not concerned with the particular bidding rules of the auction, only with the methods and systems used to select the winning bids" (Application at page 15, lines 6-7).

Indeed, Appellant suspects that the Examiner may be attempting to construe the term "constraint" by using a general definition of the term. However, Appellant submits that the term should be construed as the term is used **in the field of mathematics**. Appellant would point out that **in the field of mathematics**, the term "constraint" may be construed to mean "a restriction of the feasible solutions in an optimization problem" (e.g., see wikipedia.org/wiki/Constraint) (emphasis added). Even assuming (arguendo) that Ausubel teaches or suggests an "optimization problem", **nowhere does Ausubel teach that a "bidding rule" is used as a restriction of the feasible solutions in such an optimization problem.** Therefore, the Examiner is clearly construing the term "constraint" in a manner contrary to its commonly accepted definition.

Further, Appellant would point out that the term "constraint" is used in the Specification in a manner similar to the commonly accepted definition. For example, the Specification states that "[t]o designate whether the bid by bidder *p* for item *i* is included in the winning combination of bids, we use decision variables $x_{i,p}$ each of which must take either the value 0 (indicating that the bid *i* is not in the winning combination) or the value 1 (indicating that the bid *i* is in the winning combination)... Each of the user specified constraints described above can be modeled as a linear constraint in these binary variables" (Application at page 8, lines 13-19). Therefore, the "set of winning bids can be determined by solving the following integer program: $Max \sum_{i,p} v_{i,p} x_{i,p}$ " (where $v_{i,p}$ is the value of the

bid bidder *p* has placed for item *i*), **subject to the linear constraints used to model the user specified constraints,** (Application at page 10, line 16-page 17, line 12).

Clearly, nowhere does Ausubel teach or suggest that his "bidding rules" are used to as a constraint to solve an "integer program". Therefore, the Examiner is clearly construing the term "constraint" in a manner that is completely contrary to the meaning given to the term in the Specification.

Therefore, it is completely unreasonable for the Examiner to attempt to equate the "bidding rules" in Ausubel with the "constraint" in the claimed invention.

Moreover, considering that Ausubel does not teach or suggest a "constraint" as in the claimed invention, Ausubel certainly does not teach or suggest "*determining a winner in the auction, based on the constraint specified by the participant*", as in the claimed invention of claim 1. Indeed, even assuming arguendo that Ausubel teaches that the "bidding rule" is used to determine, for example, whether Bidder 1 is awarded shares of stock (e.g., Ausubel at col. 12, lines 14-19), as noted above, the "bidding rule" in Ausubel is unrelated to the constraint in the claimed invention. Therefore, Ausubel would still not teach or suggest determining a winner in the auction, **based on the constraint** specified by the participant.

Further, Appellant would point out that the Ausubel system is unrelated to the claimed invention. Indeed, Ausubel discloses that the bidders are required to express combinatorial bids. As such, the bidders in Ausubel must explicitly list all acceptable combinations of items along with a value of each listed combination. However, bid formation and valuation in this manner is complex, and typically performed by experts, sometimes with the aid of economic modeling tools.

The claimed invention, on the other hand, does not necessarily require the bidders to express combinatorial bids. As noted above, each bidder (e.g. a casual eBay user with no economic or mathematical expertise) can place individual bids for each item of interest to him/her while specifying a value for each item of interest. The present invention provides a method that takes the constraint(s) specified by each bidder and determines the

winning bids from the individual bids placed by the bidder that maximize total revenue without violating any of the bidder's specified constraint(s).

Ausubel makes no reference or suggestion to such features. In fact, as noted above, the Examiner concedes that Ausubel does not teach or suggest **determining a winner** in the auction, based on the constraint specified by the participant, wherein the constraint characterizes combinations of items. However, the Examiner alleges that "*both parties to an auction transaction are winners in the commonly understood meaning of any transaction which results from an auction, since botth (sic) parties have to be satisfied that the yare (sic) each better off by entering into the transaction versus not entering into the transaction*". This is clearly unreasonable. Indeed, as noted above, the term "winner," may refer to the winning combination of bids as determined based on a **constraint** (e.g., a user-specified constraint).

In addition, even assuming arguendo that Ausubel suggests that the transactions result from the auctions taught in Ausubel, there is no teaching or suggestion that "the constraint characterizes combinations of items desired by the participant within the auction system; and determining a winner in the auction, based on the constraint specified by the participant," as recited in claim 1. In this manner, as noted above, by the participant specifying a constraint that characterizes combinations of desired items, the winning bids can be determined from several independent bids for a variety of desired items submitted by the participant based on the specified constraint. Thus, the claimed invention does not necessarily require the bidders to express combinatorial bids.

However, Ausubel does not even recognize the desirability or benefit of providing such a feature. As noted above, the bidders in Ausubel must explicitly list all acceptable combinations of items along with a value of each listed combination. Ausubel actually makes no reference or suggestion to receiving at least one constraint specified by a participant in the auction, that characterizes combinations of items desired by the participant within the auction system, and determining a winner based on the specified constraints, as in independent claim 1.

Clearly, there are elements of independent claim 1 that are neither taught nor suggested by Ausubel.

Therefore, the Board is respectfully requested to withdraw this rejection.

b. Independent Claim 13

Independent claim 13 recites:

"*A program medium executable in a computer system for facilitating an auction, the program medium comprising machine-readable instructions to cause the computer system to execute steps for:*

establishing an auction system;

enabling the auction system so that it is responsive to constraints specified by a participant in the auction, wherein the constraints characterize combinations of items desired by the participant within the auction system; and

generating a proposal, based on the constraints specified by the participant, using a column generation formulation."

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel does not teach or suggest "*generating a proposal, based on the constraints specified by the participant, using a column generation formulation* " as recited in claim 13.

Appellant notes that these features are similar to the features discussed above with respect to claim 1. Therefore, Appellant's arguments made above with respect to claim 1 are incorporated by reference herein.

Further, Ausubel does <u>not</u> teach or suggest generating a proposal based on the constraints, specified by the participant, using a column generation formulation. Indeed, the Examiner **surprisingly** attempts to support his position that Ausubel suggest **a column generation formulation by stating simply that** "Fig. 3D displays bid data in a column". Again, as with the term "constraint", the Examiner is construing the term "column

generation" in a manner that is contrary to its common usage in the art and certainly contrary to the manner in which the term is used in the Specification.

Specifically, **in the field of mathematics,** the term "column generation" may be defined as an algorithm for solving linear programs (e.g., large linear programs). That is, many linear programs are too large to consider all the variables explicitly. Since most of the variables will be non-basic and assume a value of zero in the optimal solution, only a subset of variables need to be considered when solving the problem. **Column generation** may leverage this idea to generate only the variables which have the potential to improve the objective function--that is, to find variables with negative reduced cost (assuming without loss of generality that the problem is a minimization problem) (e.g., see wikipedia.org/wii/Delayed_column_generation).

Indeed, the Specification uses the term "column generation" in a similar manner (e.g., see Application at page 12, line 6- page 13, line 22).

The Examiner, however, simply states that Ausubel in Figure 3D teaches displaying bid data in a column. Clearly, **the Examiner's analysis is superficial and overly simplistic**. In fact, nowhere in Figure 3D, or anywhere else, does Ausubel teach or suggest an algorithm for solving linear programs (e.g., large linear programs). Thus, Ausubel clearly does not teach or suggest **generating a proposal, based on the constraints specified by the participant, using a column generation formulation.**

Clearly, there are elements of independent claim 13 that are neither taught nor suggested by Ausubel.

Therefore, Appellant respectfully submits that Ausubel does not teach or suggest and every feature of the claimed invention as recited in claim 13.

Therefore, the Board is respectfully requested to withdraw this rejection.

c. Independent Claim 14

Independent claim 14 recites:

"*A computer implemented method for facilitating an auction comprising:*

receiving constraints specified by a participant in the auction, wherein the constraints characterize combinations of items desired by the participant within an auction system; and

formulating a winner determination problem, with the constraints specified by the participant, as an integer problem."

Appellant notes that these features are similar to the features discussed above with respect to claim 1. Therefore, Appellant's arguments made above with respect to claim 1 are incorporated by reference herein.

Therefore, Appellant respectfully submits that Ausubel does not teach or suggest each and every feature of the claimed invention as recited in claim 14.

Therefore, the Board is respectfully requested to withdraw this rejection.

d. Dependent Claim 2

Claim 2 depends from claim 1 and further recites *"wherein the auction system is selected from a group consisting of an open cry auction, an ascending bid auction, and a descending bid auction "*. This feature is clearly described in the present Application at page 1, lines 14-15.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 2. Therefore, the Board is respectfully requested to withdraw this rejection.

e. Dependent Claim 6

Claim 6 depends from claim 1 and further recites *"further comprising enabling the auction system so that it is responsive to constraints selected from the group consisting of a maximum quantity constraint, a minimum quantity constraint, a precedence constraint,*

and a general linear constraint". This feature is clearly described in the present Application at page 7, line 10-page 8, line 8.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 6. Therefore, the Board is respectfully requested to withdraw this rejection.

f. Dependent Claim 7

Claim 7 depends from claim 1 and further recites *"further comprising enabling the auction system so that it is responsive to seller constraints"*. This feature is clearly described in the present Application at page 14, lines 7-8; page 6, line 19-page 7, line 2.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 7. Therefore, the Board is respectfully requested to withdraw this rejection.

g. Dependent Claim 11

Claim 11 depends from claim 1 and further recites *"further comprising formulating a winner determination problem with the constraint specified by the participant as an integer problem "*. This feature is clearly described in the present Application at page 8, line 9-page 11, line 17.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 11. Therefore, the Board is respectfully requested to withdraw this rejection.

h. Dependent Claim 12

Claim 12 depends from claim 11 and further recites *"further comprising applying the integer program for determining at least one winner "*. This feature is clearly described in the present Application at page 8, line 9-page 11, line 17.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 12. Therefore, the Board is respectfully requested to withdraw this rejection.

i. Dependent Claim 15

Claim 15 depends from claim 14 and further recites "*determining winners from among participants in the auction by applying the integer program.*" This feature is clearly described in the present Application at page 8, line 9-page 11, line 17.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 15. Therefore, the Board is respectfully requested to withdraw this rejection.

j. Dependent Claim 16

Claim 16 depends from claim 14 and further recites "*specifying combinatorial bids by interpreting the constraints* ". This feature is clearly described in the present Application at page 16, line 17-page 17, line 2.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 16. Therefore, the Board is respectfully requested to withdraw this rejection.

k. Dependent Claim 17

Claim 17 depends from claim 14 and further recites "*generating a proposal based on the constraints specified by the participant using a column generation formulation*". This feature is clearly described in the present Application at page 12, line 1-page 14, line 10; page 16, line 17-page 17, line 2.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 17. Therefore, the Board is respectfully requested to withdraw this rejection.

l. Dependent Claim 18

Claim 18 depends from claim 17 and further recites *"wherein the proposal comprises a set of bids from the participant that satisfies the constraints specified by the participant* ". This feature is clearly described in the present Application at page 12, lines 9-10.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 18. Therefore, the Board is respectfully requested to withdraw this rejection.

m. Dependent Claim 19

Claim 19 depends from claim 14 and further recites *"wherein the constraints are represented by linear relationships between indicator variables on bids from the participant "*. This feature is clearly described in the present Application at page 8, line 18-page 10, line 15.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, Ausubel clearly does not teach or suggest this feature.

Therefore, Appellant respectfully submits that Ausubel clearly does not teach or suggest each and every feature of the claimed invention as recited in claim 19. Therefore, the Board is respectfully requested to withdraw this rejection.

B. Claims 3-5 are clearly not unpatentable under 35 U.S.C. § 103(a) over Ausubel in view of McAfee et al. (U. S. Patent No. 6,718,312);

1. The Examiner's Position

The Examiner concedes on pages 5-6 of the Office Action that Ausubel does not teach or suggest "*wherein the constraints characterize combinations of bids from the participant for the desired items within the auction system*" (as recited in claim 3), or "*enabling the auction system so that it is responsive to a budget constraint*" (as recited in claim 4), or "*wherein the budget constraint is specified by the participant*" (as recited in claim 5). However, the Examiner alleges that these features are taught by McAfee.

2. Dependent Claim 3

The Examiner's allegations are flawed as a matter of fact and law.

The Examiner alleges that Ausubel would have been combined with McAfee to form the invention defined in claims 3-5. However, Appellant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

McAfee discloses a method and system for dynamic combinatorial auctions employing bid composition restrictions. (See McAfee at Abstract)

Appellant respectfully submits that these references would not have been combined as alleged by the Examiner. Indeed, no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Appellant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teaches or suggests their combination.

Therefore, Appellant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

Moreover, neither Ausubel, nor McAfee, nor any alleged combination thereof teaches or suggests "*determining a winner in the auction, based on the constraint specified by the participant*", as recited in claim 1. As noted above, the claimed invention may allow the "winner determination problem" to be **formulated as an integer program (e.g., including the constraints specified by a participant in the auction) which can be solved by commercially available software packages** (Application at page 1, lines 5-7).

Clearly, this feature is not taught or suggested by McAfee. Indeed, McAfee simply addresses simultaneous ascending auctions (SAA), in which multiple items are auctioned simultaneously in fixed rounds. However, in an SAA there are fixed, synchronized rounds, with the entire allocation being determined at the end of each round. Further, in an SAA,

as disclosed in McAfee, the additional "restrictions" are placed by the auctioning organization or seller and apply uniformly to all bidders.

However, McAfee does not teach or suggest receiving at least one constraint (e.g., a restriction of the feasible solutions in an optimization problem) **specified by a participant in the auction, wherein the constraint characterizes combinations of items desired by the participant within the auction system.** Thus, McAfee certainly does not teach or suggest **determining a winner in the auction, based on the constraint** specified by the participant.

Therefore, McAfee clearly does not make up for the deficiencies of Ausubel.

Further, Appellant notes that claim 3 depends from claim 1 and further recites "*wherein the constraints characterize combinations of bids from the participant for the desired items within the auction system*". This feature is clearly described in the present Application at page 12, lines 6-9. Nowhere is this feature taught or suggest by Ausubel or McAfee or any alleged combination thereof.

Therefore, Appellant submits that there are features of the invention of claim 3 that are not taught or suggested either Ausubel, or McAfee, or any combination thereof. Therefore, the Board is respectfully requested to withdraw this rejection."

b. Dependent Claim 4

Claim 4 depends from claim 1 and further recites "*further comprising enabling the auction system so that it is responsive to a budget constraint* ". This feature is clearly described in the present Application at page 5, lines 13-16, page 7, lines 10-16.

Appellant herein incorporates the argument included above with respect to claim 3.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, neither Ausubel, nor McAfee, nor any alleged combination thereof teaches or suggests this feature.

Therefore, Appellant respectfully submits that neither Ausubel, nor McAfee, nor any alleged combination thereof teaches or suggests each and every element of the claimed

invention as recited in claim 4. Therefore, the Board is respectfully requested to withdraw this rejection.

c. Dependent Claim 5

Claim 5 depends from claim 4 and further recites *"wherein the budget constraint is specified by the participant "*. This feature is clearly described in the present Application at page 5, lines 13-16.

Appellant herein incorporates the argument included above with respect to claim 3.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, neither Ausubel, nor McAfee, nor any alleged combination thereof teaches or suggests this feature.

Therefore, Appellant respectfully submits that neither Ausubel, nor McAfee, nor any alleged combination thereof teaches or suggests each and every element of the claimed invention as recited in claim 5. Therefore, the Board is respectfully requested to withdraw this rejection.

C. Claims 9-10 are clearly <u>not unpatentable</u> under 35 U.S.C. § 103(a) over Ausubel in view of Macready, et al. (U.S. Publication No. 2002/0016759)

1. The Examiner's Position

The Examiner concedes that Ausubel does not teach or suggest "*wherein the seller constraints specify a minimum value for a combination of a minimum number of items to be sold*" (as recited in claim 9) nor "*wherein the seller constraints specify a minimum value for a combination of items correlated to a precedence relationship*" (as recited in claim 10). However, the Examiner alleges that these features are taught by Macready.

a. Dependent Claim 9

The Examiner's allegations are flawed <u>as a matter of fact and law</u>.

The Examiner alleges that Ausubel would have been combined with Macready to form the invention defined in claims 8-10. However, Appellant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Macready discloses a system which allows buyers to define their preferences and sellers to define their capabilities, then determines which trading points maximize the utility of the buyer. (Macready at Abstract)

Appellant respectfully submits that these references would not have been combined as alleged by the Examiner. Indeed, no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Appellant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teach or suggest their combination.

Therefore, Appellant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner. Therefore, the Examiner has failed to make a prima facie case of obviousness.

Moreover, neither Ausubel, nor McAfee, nor any alleged combination thereof teaches or suggests "*determining a winner in the auction, based on the constraint specified by the participant*", as recited in claim 1. As noted above, the claimed invention may allow the "winner determination problem" to be **formulated as an integer program (e.g., including the constraints specified by a participant in the auction) which can be solved by commercially available software packages** (Application at page 1, lines 5-7).

Clearly, this feature is not taught or suggested by Macready. Indeed, Macready discloses representing buyer preferences and seller capabilities in terms of multidimensional mathematical expressions, and then searching and visualizing this space for the purpose of identifying one or more potential matches. Macready provides a compact encoding of buyer and seller information and a notion of "distance" between a request and a capability or offering, to enable rapid searching by a computer implemented algorithm.

However, Macready does not teach or suggest receiving at least one constraint (e.g., a restriction of the feasible solutions in an optimization problem) **specified by a participant in the auction, wherein the constraint characterizes combinations of items desired by the participant within the auction system.** Thus, Macready certainly does not teach or suggest **determining a winner in the auction, based on the constraint** specified by the participant.

Therefore, Macready clearly does not make up for the deficiencies of Ausubel.

Further, claim 9 depends from claim 7 and further recites *"wherein the seller constraints specify a minimum value for a combination of a minimum number of items to be sold"*. This feature is clearly described in the present Application at page 6, line 19-page 7, line 2. This feature is clearly described in the present Application at page 12, lines 6-9. Nowhere is this feature taught or suggest by Ausubel or Macready or any alleged combination thereof.

In particular, Macready makes no reference to the seller constraints specifying any of a minimum value for a combination of items, or a minimum number of items to be sold, or a minimum value for a combination of items correlated to a precedence relationship, as in claims 8-10. Rather, Macready merely notes that "[b]uyers and sellers may express constraints over both continuous and discrete variables," (Macready at page 6, paragraph [0077]) and that "a seller [may] express additional linear constraints" (Macready at page 8, paragraph [0108]).

Therefore, Macready clearly does not make up for the deficiencies of Ausubel.

Therefore, Appellant submits that there are features of claim 9 that are not taught or suggested by Ausubel, or Macready, or any combination thereof. Therefore, the Board is respectfully requested to withdraw this rejection.

b. Dependent Claim 10

Claim 10 depends from claim 7 and further recites *"wherein the seller constraints specify a minimum value for a combination of items correlated to a precedence*

relationship." This feature is clearly described in the present Application at page 6, line 19-page 7, line 2.

Appellant herein incorporates the argument included above with respect to claim 9.

Appellant respectfully submits that the Examiner's position is flawed as a matter of fact and as a matter of law. Specifically, neither Ausubel, nor Macready nor any alleged combination thereof teaches or suggests this feature.

Therefore, Appellant respectfully submits that neither Ausubel, nor Macready, nor any alleged combination thereof teaches or suggests each and every element of the claimed invention as recited in claim 10. Therefore, the Board is respectfully requested to withdraw this rejection.

VIII. CONCLUSION

In view of the foregoing, Appellant respectfully submits that claims 1-19, all the claims presently pending in the application, are clearly patentably distinct from the prior art of record and in condition for allowance. Thus, the Board is respectfully requested to remove all rejections of claims 1-19.

Please charge any deficiencies and/or credit any overpayments necessary to enter this paper to Assignee's Deposit Account number 50-0510.

Respectfully Submitted,

Date: July 10, 2006

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CLAIMS APPENDIX

1. (Previously Presented) A computer implemented method for an auction comprising:

establishing an auction system;

receiving at least one constraint specified by a participant in the auction, wherein the constraint characterizes combinations of items desired by the participant within the auction system; and

determining a winner in the auction, based on the constraint specified by the participant.

2. (Previously Presented) A method according to claim 1, wherein the auction system is selected from a group consisting of an open cry auction, an ascending bid auction, and a descending bid auction.

3. (Previously Presented) A method according to claim 1, wherein the constraints characterize combinations of bids from the participant for the desired items within the auction system.

4. (Previously Presented) A method according to claim 1, further comprising enabling the auction system so that it is responsive to a budget constraint.

5. (Previously Presented) A method according to claim 4, wherein the budget constraint is specified by the participant.

6. (Previously Presented) A method according to claim 1, further comprising enabling the auction system so that it is responsive to constraints selected from the group consisting of a maximum quantity constraint, a minimum quantity constraint, a precedence constraint, and a general linear constraint.

7. (Previously Presented) A method according to claim 1, further comprising enabling the auction system so that it is responsive to seller constraints.

8. (Previously Presented) A method according to claim 7, wherein the seller constraints specify a minimum value for a combination of items.

9. (Previously Presented) A method according to claim 7, wherein the seller constraints specify a minimum value for a combination of a minimum number of items to be sold.

10. (Previously Presented) A method according to claim 7, wherein the seller constraints specify a minimum value for a combination of items correlated to a precedence relationship.

11. (Previously Presented) A method according to claim 1, further comprising formulating a winner determination problem with the constraint specified by the participant as an integer problem.

12. (Previously Presented) A method according to claim 11, further comprising applying the integer program for determining at least one winner.

13. (Previously Presented) A program medium executable in a computer system for facilitating an auction, the program medium comprising machine-readable instructions to cause the computer system to execute steps for:

establishing an auction system;

enabling the auction system so that it is responsive to constraints specified by a participant in the auction, wherein the constraints characterize combinations of items desired by the participant within the auction system; and

generating a proposal, based on the constraints specified by the participant, using a column generation formulation.

14. (Previously Presented) A computer implemented method for facilitating an auction comprising:

receiving constraints specified by a participant in the auction, wherein the constraints characterize combinations of items desired by the participant within an auction system; and

formulating a winner determination problem, with the constraints specified by the participant, as an integer problem.

15. (Previously Presented) A method according to claim 14, further comprising:

determining winners from among participants in the auction by applying the integer program.

16. (Previously Presented) A method according to claim 14, further comprising:

specifying combinatorial bids by interpreting the constraints.

17. (Previously Presented) A method according to claim 14, further comprising:

generating a proposal based on the constraints specified by the participant using a column generation formulation.

18. (Previously Presented) A method according to claim 17, wherein the proposal comprises a set of bids from the participant that satisfies the constraints specified by the participant.

19. (Previously Presented) A method according to claim 14, wherein the constraints are represented by linear relationships between indicator variables on bids from the participant.

EVIDENCE APPENDIX

(NONE)

RELATED PROCEEDINGS APPENDIX

(NONE)

Appellant's Brief on Appeal
S/N: 09/850,383

CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that the foregoing was filed by facsimile with the United States Patent and Trademark Office, Examiner Chencinski, Siegfried E. Group Art Unit # 3628 at fax number (571) 273-8300 this 10th day of July, 2006.

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